

ABSTRACT

The present invention relates to a millimeter wave frequency band optical oscillator used for an oscillating frequency signal source of millimeter waves transmitted from a repeater to a wireless subscriber in a millimeter wave wireless subscriber communication system for a next-generation (i.e., 5th generation or less) very high speed wireless internet service, wherein a loop mirror and a pair of optical fiber grating mirrors are used. A wavelength fixed type and a wavelength tunable type optical fiber grating mirrors are connected in a serial manner to constitute a dual laser mode resonator capable of simultaneously oscillating two laser modes, which are appropriate to each wavelength. Therefore, it is possible to obtain a laser light source capable of an extremely high frequency (60GHz or more) modulation by using beat phenomena between two laser modes.